

one-story building, upon high ground, dry, well sewered, and well exposed to sunshine. A face-brick next above foundation contained one ounce of water; four feet higher one-half; and just under roof one-twelfth. In a building differently circumstanced, notoriously damp and unwholesome, on high but "made" ground, a face-brick in the fourth row from the foundation was found to contain eighteen ounces of water! As to the capacity for absorption, three bricks from a building in process of erection took up in twenty-four hours from 8 to 15 ounces. From a certain brick-yard, samples of face-brick and pressed brick absorbed $10\frac{1}{2}$ and 11 ounces; and from another, pressed brick drank up $20\frac{1}{2}$ and $18\frac{1}{2}$, all in the same time. These results are certainly startling. We cannot suppose that lateral or horizontal absorption, as from driving rains, could be much different from that which proceeds upward from wet foundations. Such modification of the process of manufacture as should prevent this action should be most earnestly sought.

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ART. XXXI.—*A Practical Treatise on Diseases of the Eye.* By ROBERT BRUDENELL CARTER, F.R.C.S., Ophthalmic Surgeon to St. George's Hospital, etc. With numerous illustrations. 8vo. pp. 584. London: Macmillan & Co., 1875.

THE title of the work would naturally lead us to look for a far more detailed account of the symptoms, pathology, and treatment of eye diseases than is here presented, but the author expressly informs us in his preface that his object is to present, "in a concise and readable form, a general view of the present state of knowledge with regard to the nature and treatment of the more important diseases of the eye," and it is therefore according to this standard that the work should be judged.

In the chapter on the anatomy of the eye Mr. Carter avows his belief in the total decussation of the optic nerves at the chiasm. It seems to us, however, that the statements and investigations of Bisiadecki, Michel, and others who have advanced this view, are by no means irrefragable, and that, while total crossing of the nerves is admitted by all to take place in many animals, nevertheless, sections of the optic chiasm in man, as well as the experiments of Gudden on lower animals, prove that there is only a semi-decussation at the commissure. Gudden has demonstrated, that, if in new-born animals one eye be enucleated, and the animal allowed to grow up, there ensues an atrophy of the optic nerves, tracts, and centres which correspond to the enucleated organ. Rabbits treated in this way showed an entire crossing of the fibres, inasmuch as the optic tract of the opposite side was atrophied while that of the same side underwent no change; in dogs, however, there was a partial atrophy of both optic tracts where the eye of one side only had been enucleated; thus disproving a total crossing for these animals.

In the chapters on the examination of the eye and on the ophthalmoscope, we have a clear description of the author's perimeter and of his demonstrating ophthalmoscope, which are now generally and justly esteemed admirable and useful instruments. We were, however, somewhat astonished in being informed (at p. 86) that we cannot have an aperture in our mirror larger than 2 millimetres for the successful obtaining of the erect image where the pupil is undilated; while daily experience proves that we can most readily obtain a view of the fundus with the direct method and without the use of atropia, when we use the mirrors of Loring or Knapp, each of which has an aperture of 3 millimetres.

The author seems also to lose sight of the fact that a 2 millimetre hole in an ophthalmoscope acts as any other small diaphragm and renders it more difficult to judge of the degree of myopia or hypermetropia, or of the presence of astigmatism.

The pulsation which we so frequently observe in the main branches of the central retinal vein, Mr. Carter attributes to increased intraocular tension, "that is to say, to a state which either is or approaches glaucoma," and thinks, that, while in the young it represents the utmost limit of physiological tension, "in persons beyond middle age in whom a venous pulse either exists or can be produced by very slight pressure, the eye may generally be regarded as standing near the brink of glaucomatous change."

In the chapter entitled "Principles of Ophthalmic Therapeutics," our author is a warm advocate of mercury, as by far the most curative agent in the treatment of syphilis, and we think most justly gives it the preference to iodide of potassium, although recognizing that in the later stages of the disease the latter is more prompt in its effects. At the same time he points out the possible fallacy in arguing from its beneficial effects in diseases of the eye to those obtained in other organs, and calls attention to the theory of Anstie, that it has a special affinity for the organs supplied by the fifth pair.

Mr. Carter's experience in the results of operations for pterygium seems to have been exceptionally unfavourable. He maintains that "it is scarcely at all amenable to treatment. The hypertrophied material may be removed by excision or ligature, but the same kind of action is often renewed in the cicatrix, and the patient seldom derives material or lasting benefit from the operation. A pterygium does no harm unless it extends so far over the cornea as to obstruct vision, and then the best course is to enlarge the pupil by iridectomy."

The operation of Saemisch for serpiginous corneal ulcer is condemned on the ground that it acts beneficially only by diminution of tension, while the resulting cicatrices cause pain and irritation, and iridectomy is therefore advocated in its stead. Corneal abscess is treated by incision from within, "a fine cutting needle is introduced through the sclero-corneal junction," and the abscess evacuated through Descemet's membrane "without perforation of the anterior lamina of the cornea." The wound may be opened from time to time with a probe to evacuate the aqueous, and any therein-contained pus or disintegrated corneal tissue. We are assured that under the influence of this treatment speedy amendment may generally be looked for.

Of the operations of Streatfield and Passavant for the detachment of iritic adhesions, Mr. Carter speaks unfavourably, usually preferring iridectomy. He has seen cataract follow the latter operation, and on this account, as well as on account of the frequent repetitions of the operation which are necessary where there are several adhesions, and the danger of having the iris heal in the incision, he has of late entirely abandoned the latter operation.

In the chapter on cataract, the author takes very decided ground in favour of Graefe's periphæric linear operation; although, in common with most operators of the present day, he, while adhering to the essential principles laid down by its originator, places his incision a little further forward in the cornea. In discussing extraction by transverse corneal incision as proposed by Kuchler, and the various modifications of it since advocated by Liebreich, Lebrun, Warlomont, and others, Mr. Carter expresses himself very decidedly, and his views coincide so closely with our own that we cannot refrain from quoting them at length.

"It would be waste of time to examine these arguments, because transverse corneal incisions stand self-condemned on *a priori* grounds. They have the

single recommendation that it is very easy to make them; and they might perhaps be attempted with advantage by a benevolent traveller who was sojourning among a savage tribe, or by an ophthalmic surgeon upon whom the infirmities of age were creeping, or by one who was prevented by the natural quality of ambisiduousness, from employing better methods with ordinary prospects of success. Even in such cases Lord Melbourne's pithy inquiry 'couldn't you have let it alone?' would be likely to suggest itself to reasonable men. As a matter of first principles an incision through the front of the cornea must, in a large proportion of cases, be followed by adhesions of the iris to some part of the cicatrix, and adhesion of the iris, even if vision is for a time restored, entails a perpetual liability to the occurrence of destructive morbid changes. In the practice of Dr. Kuchler, adhesion confessedly took place in 6 eyes out of 28, and I am told that the same thing has happened in the practice of those English surgeons who have employed Mr. Liebreich's modification of Kuchler's method."

In 1872 the periodic International Congress of Ophthalmology met in London, and our countryman, Dr. B. Joy Jeffries, of Boston, read a paper on anaesthetics, in which he strongly advocated the use of ether, and subsequently by public administrations of it at the various London hospitals, practically demonstrated its capabilities. A number of English surgeons were thereby induced to give up the use of chloroform, and among them is Mr. Carter, who now uses ether exclusively in his practice, on the ground advocated by Dr. Jeffries that "occasional deaths are inseparable from the employment of chloroform, and that there ought to be no deaths in ophthalmic surgery."

In the chapter on the uses and selection of spectacles, Mr. Carter advocates the use of orthoscopic glasses in presbyopia, and remarks, "I am fully convinced that over-fatigue of aged eyes may be an important factor in the causation of both cataract and of glaucoma, and entertain no doubt that a more general employment of prismatic spectacles, in cases specially calling for them, would very materially contribute to the preservation of sight."

An interesting case of eye headache caused by myopia and insufficiency of the interni is related. It was mistaken by the gentleman treating it for some affection of the brain, and the patient was ordered to give up reading for honours at Oxford and to go to Australia. He came home in the same condition in which he went away, and was subsequently permanently relieved by the use of a proper pair of spectacles.

In view of the frequency of such mistakes in diagnosis where the symptoms are really attributable not to any disease of the nervous system but to an eye strain due to an uncorrected astigmatism, we can but regret that the author has given so little space to the discussion of defects of refraction, and of astigmatism in particular.

In strong contrast with the general accuracy of the work is the carelessness which allows so diagrammatic and erroneous a section of the eyeball as that figured in plate 1 to go before the public. The iris is there represented as springing from the inner wall of the canal of Schlemm, and consequently an entirely erroneous idea of the shape and extent of the anterior and posterior chambers is obtained. A comparison with any good cut either of a fresh or carefully hardened eye will show the mistake, a mistake to which we here call attention on account of the importance of a correct idea of the anatomy of this region to all operations on the eye.

In conclusion, we cordially recommend the work to our professional brethren. It contains in clear and explicit language a condensed abstract of eye surgery by a highly educated ophthalmologist of extended experience and good judgment, and cannot fail to form interesting and instructive reading to all investigating the subjects of which it treats.

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